

**Notice of Allowability**

Application No.

09/966,049

Examiner

Thomas H. Stevens

Applicant(s)

BOEHM, FRITZ A.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/11/2005.
2. ☒ The allowed claim(s) is/are 1,3-8,10 and 12-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 11/11/2005.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>9/28/01 &amp; 11/14/05</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material   | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

**DETAILED ACTION**

1. Claims 1-14 were previously examined.
2. Claims 2,9,11 were cancelled.
3. Claims 1,3-8,10, 12-14 were examined.

***Section I: Allowance***

4. Claims 1,3-8,10,12-14 are allowed.
5. The following is an examiner's statement of reasons for allowance:

While US Patent 6,889,180 teaches a grid that monitors a design simulation to support design verification coverage analysis, comprising: a monitor declaration that provides a unique name for the grid; n ordered axis declarations one or more logic expressions that evaluate whether the design has achieved one or more of said functional states, said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; (claim 1); a method that makes a grid that monitors a design simulation to support design verification coverage analysis, comprising; providing a monitor declaration that provides a unique name for the grid (claim 3); providing one or more logic expressions that evaluate whether the design has achieved one or more of said functional states, said logic expressions set each one of said n axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; a method that monitors a design simulation using a grid to support design verification coverage analysis, comprising: declaring a monitor in a monitor declaration that provides a unique name for the grid; evaluating one or more logic expressions to

determine whether the design has achieved one or more of said functional states (claims 4 and 5); a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that monitors a design simulation using a grid to support design verification coverage analysis, comprising: declaring (claim 5); a grid that monitors a design simulation to support design verification coverage analysis, comprising: a monitor declaration that provides a unique name for the grid; n ordered axis declaration wherein n is at least 1, each said axis declaration names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; one or more logic expressions that evaluate whether the design has achieved one or more of said functional states, said logic expressions set each one of said logic expressions evaluate true (claim 10); a method that makes a grid that monitors a design simulation to support design verification coverage analysis, comprising: providing a monitor declaration that provides a unique name for the grid; providing a n ordered axis declaration wherein n is at least 1, each said axis declaration names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; providing one or more logic expressions that evaluate whether the design has achieved one or more of said functional states, said logic expressions set each one of said logic expressions evaluate true (claim 10); a method that monitors a design

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simulation using a grid to support design verification coverage analysis, comprising:  
evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (claim 13); a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method that monitors a design simulation using a grid to support design verification coverage analysis, comprising: evaluating one or more logic expressions to determine whether the design has achieved one or more of said functional states (claim 14), none of these references, taken either alone or in combination, with the prior art of record disclose

*(claim 1) "wherein  $n$  is at least 1, each said axis declaration names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; and a grid declaration that converts said  $n$  axis variables to an integer that is a unique linear index value that corresponds to the cross-product of said functional states achieved by the design, said grid declaration also records a hit at said unique linear index value"*

*(claim 3) "providing  $n$  ordered axis declaration wherein  $n$  is at least 1, each said axis declaration names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a*

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*corresponding axis variable and providing a grid declarations that converts said  $n$  axis variables to an integer that is unique linear index value that corresponds to the cross-product of said functional states achieved by the design, said grid declaration also records a hit at said unique linear index value"*

*(claims 4 and 5) "declaring  $n$  ordered axes using axis declarations, wherein  $n$  is at least 1, each said axis declaration names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; setting each one of said  $n$  axis variables to an integer that is value corresponding to said functional state when said logic expressions evaluate true; and using a grid declaration to convert said  $n$  axis variables to a unique linear index value that corresponds to the cross-product of said functional states achieved by the design and to record a hit at said unique linear index value"*

*(claim 10) "a grid declaration that converts said  $n$  axis variables to an integer that is unique linear index value that corresponds to the cross-product of said functional states achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of tie sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration also records a hit and*

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*maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database, and a parser that translates said declaration, said axis declaration, said logic expressions, and said grid declaration into a computer program comprising a higher-order software language, said parser further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product achieved by the design"*

*(claim 12)" providing a grid declaration that converts said  $n$  axis variables to an integer that is unique linear index value that corresponds to the cross-product of said functional states achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of tie sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database, and a parser that translates said declaration, said axis declaration, said logic expressions, and said grid declaration into a computer program comprising a higher-order software language, said parser further translates each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product achieved by the design"*

*(claim 13) "declaring a monitor declaration that provides a unique name for the grid; provides a unique name for the grid; declaring  $n$  ordered axes using axis declaration, wherein  $n$  is at least 1, each said axis declaration names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; setting each one of said  $n$  axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; using a grid declaration that converts said  $n$  axis variables to an integer that is a unique declaration linear index value that corresponds to the cross-product of said functional states achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database; and translating said monitor declaration, said axis declaration, said logic expressions, and said grid declaration into a computer program comprising a higher-order software language, and translating each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each functional state within said cross-product achieved by the design"*

*(claim 14) "declaring a monitor in a monitor declaration that provides a unique name for the grid; declaring  $n$  ordered axes using axis declaration, wherein  $n$  is at least 1, each said axis declaration names an axis comprising a first axis through a  $n$ th axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable; setting each one of said  $n$  axis variables to an integer value corresponding to said functional state when said logic expressions evaluate true; using a grid declaration that converts said  $n$  axis variables to an integer that is unique linear index value that corresponds to the cross-product of said functional states achieved by the design by multiplying the integer value of each said axis variable except the  $n$ th said axis variable by the product of the sizes of each higher-order axis than the axis to which said axis variable corresponds, summing the results, and adding the integer value of the  $n$ th said axis variable, said grid declaration also records a hit and maintains a map of hits at each linear index value determined during a simulation, and downloads said map to a database, and translating said monitor declaration, said axis declaration, said logic expressions, and said grid declaration into a computer program comprising a higher-order software language, and translating each said unique linear index value to a character string comprising a concatenation of character strings that correlate to said grid name and to each said functional state within said cross-product achieved by the design"*



While the reference taken either alone or in combination with the prior art of record disclose providing n ordered axis declaration wherein n is at least 1, each said axis declaration names an axis comprising a first axis through a nth axis, wherein each said axis corresponds to a functional attribute of the design and has an axis size that comprises two or more functional states of said functional attribute and has a corresponding axis variable and providing a grid declarations that converts said n axis variables to an integer that is unique linear index value that corresponds to the cross-product of said functional states achieved by the design, said grid declaration also records a hit at said unique linear index value, in combination with the remaining elements and features of the claimed invention. It is for these reasons that the applicants' invention defines over the prior art of record.

#### ***Examiner's Amendment***

3 An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Specification, pg. 2, paragraph 2, lines 1-2, "App. Ser. No. 09/406,016" has been changed to -- Number 6,594,803 -- .

#### ***Drawings***

6. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because boxes in figure 1 are missing information. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S.

Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

***Section II: Response to Applicant's Arguments (Previous Office Action)***

***Objection to the Abstract***

7. Applicant is thanked for addressing this issue. Objection is withdrawn.

***35 U.S.C. 112, 2<sup>nd</sup> /35 U.S.C. 102(e)***

8. Applicant is thanked for addressing these issues. Rejections are withdrawn.

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

February 27, 2006

TS

  
Paul L. Rodriguez 3/1/06  
Primary Examiner  
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